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MIS and the Problem of Decoupling in E-Government Reforms

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Abstract. This paper investigates the concept of decoupling in neo- institutional theory. Through a case analysis of the development of a Management Information System (MIS) in a local health care organization in Norway, I analyzed processes of coupling-decoupling occurring during the process of development. I found that the theoretical dichotomy between the symbolic and technological inherent in the concept of decoupling conceals the relational connections between them. Using Actor-Network Theory I argue that decoupling can be considered a special case of coupling. I conclude, that to understand e-government reforms, we have to move beyond the dominant notion of IT as an enabling role. Power and politics are involved in the process of development and use. We have to take seriously that the recognition of IT as a tool is a very dominant notion and that in practice it is not easily considered as a resource invested in and used by the actors within their ongoing power game. This should be an element in our analysis. If it is not, we turn into researchers in the hand of those who need IT to enhance their interests.

Key words: MIS, health care, New Public Management, neo-institutional theory, actor-network theory, decoupling, coupling, politics, symbolic power

1 Introduction

E-Government—both as an academic research field and as a practical process of introduction, development, deployment and diffusion of IT in the public sector—is multifaceted and fragmented (Traunmüller and Wimmer 2003). It has been argued that there is a lack of any theoretically defined framework guiding e-government research (Andersen 2004), or that they are rather normative, focusing heavily on how to improve public sector; that is, the enabling role of IT. Broadly defined, e-government refers to IT-enabled change in governmental institutions at all levels from national to regional to local (Kawalek et al. 2003). Although there are several definitions of e-government, the above definition is illustrative in that it points to the means-end notion that is implicit in many e-government projects. Bellamy and Taylor (1998, p. 150) propose an institutional approach as an alternative to the dominant approach, which they consider to be biased towards technological-supported reforms that, in turn, reflects an economic scope. Robbin et al. (2004, p. 465) argue that network theory—because it encompasses people, institutions and technologies—contributes significantly to weakening claims made by technological determinists about how technology shapes individual and social practices.

As outlined by Jain (2004), the challenges facing e-government reform can be formulated in the following way: On one hand, IT is a tool for reforming public bureaucracy. On the other hand, e-government failure is a consequence of dysfunctional bureaucratic practice. In my view, these two challenges are interrelated. New bureaucratic regulations might actually be tailored to support IT-based changes. Thus, if IT changes are legitimized within an economic logic consequential in its nature, we have to focus on the relations between economics, IT and bureaucracy. The tensions and resistance arising out of such an alliance cannot be explained by referring to bureaucratic rigidity but might be viewed as conflicts of interest with regard to politics and power. This paper demonstrates this interrelatedness by analysing Management Information System (MIS) development in a health care organization in one municipality in Norway. Specifically, I analyse how the constructions of IT are enmeshed in New Public Management (NPM) reform and organizational practices.

New Public Management or NPM is a label for recent administrative reforms. According to Christensen and Lægreid (2001, p. 18), the concept was first used by Hood (1991). NPM has its origins in certain Anglo-Saxon countries and in international organizations, economic cooperation and development. A kind of ‘reform myth’ has taken hold, becoming ideologically dominant and diffused over the world (Czarniawska and Sevon 1996; Sahlin-

Anderson 2003; Lægreid et al. 2003). Although NPM is a heterogeneous movement, there are commonalties that can be distinguished (see Ferlie et al. 1996). Among its key concepts are efficiency and effectiveness, measuring of performance, and a focus on the citizen as a consumer in a quasi-market (Busch et al. 1999, p. 23). NPM is also characterized by a strong focus on IT as a means to enhance an organization's performance (Bellamy and Taylor 1998).

Our focus is on public reforms and the role of MIS. Our point of departure is that these IT-based change efforts are, to a great extent, elements within broader streams of public reforms, namely NPM. Although NPM is heterogeneous as a reform movement, it is also characterized by a rational perspective on organized action; that is, a focus on rational choice and design and on the formal organizational structure as the means to achieve stated goals (Scott 1992). Critics of public reforms, expressed from within the field of neo-institutional theory, attack the strong assumption of rational choice and the unrealistic assumptions of social control inherent in public reform programs (Brunsson and Olsen 1993). According to Brunsson and Olsen, the decoupling of the formal structure and practical action explains the problem of getting public reforms to work as intended. It is argued that they may have an effect on a symbolic level but do *not* have any substantial effect on organizational practice. Within the context outlined above, this paper investigates the decoupling hypothesis as it is formulated in neo-institutional theory (Meyer and Rowan 1991, p. 41) This research is also relevant for e-government research because it might help to explain the problems and challenges of making e-government efforts work as intended.

'Decoupling' designates a distinction between the formal structure of an organization and its actual day-to-day activities. The formal structure is considered in the category of myths and ceremonies and does not necessarily correspond to technical efficiency. Similarly, two sets of organizational processes evolve: one concerned with the production of goods and services, and one that is displayed to the rest of the world. Relative to the orthodoxy of organizational theory focusing one-sidely on substantial effects, neo-institutional theory—with its focus on the symbolic and constructive nature of organized action—has greatly extended our understanding. We agree that public reforms have effects on a symbolic level, but we are critical toward the proposition that they do not have impact on practical organizational action. In fact, we state that the dichotomy between the symbolic and the substantial has to be translated into a relation between these two dimensions. We also agree that there is no perfect link between formal prescriptions and actual practice. In that sense, the concept of decoupling is productive because it results in a more thorough

understanding of organizational change and public reforms. But we need to go further and investigate how structural reforms become enmeshed with organizational practice—and to what effect. Thus, I propose to consider decoupling as being a special case of coupling; that is, that decoupling is something that is (re-)produced, operating as a way of managing problems and constructing solutions, and thus influencing action. This implies that we are not interested only in decoupling as such but also how things are coupled, particularly through the use of IT in public reforms.

Researchers within neo-institutional theory who have studied public reforms have given us insight into the complexities of public reform efforts by taking a critical stand (Brunsson and Olsen 1993); however, this research focuses very little on IT. Orlikowski and Barley (2001) argue that because of important epistemological differences between the fields of information technology and organization studies, much can be gained from greater interaction between them. They also argue that information technology research benefit from institutional analysis, while organizational studies benefit by following the lead of information technology research, which takes material properties of technology into account. This paper is a contribution to e-government research in following up such an intention.

In this paper, I analyse decoupling in practice using a historical case concerning the development and use of a MIS in a local health care organization in Norway. My aim is to demonstrate the usefulness of considering the symbolic and technological as relations that, in combination, give power to ongoing public reform efforts. It is well known in the field of information systems that MIS development is a socio-technical process. I take a radical view, considering MIS as a powerful actor and argue that this is due not only to its technological capacity but also to the symbolic dimensions. I illustrate how the development of the MIS is related to the reform process in the municipality. The point of departure is neo-institutional theory; however, to elaborate our argument, we use elements from the IT academic field. This paper does so by using actor-network theory (ANT), which I contend is suitable for understanding how technological artefacts are important elements in processes of decoupling-coupling in public reforms.

The remainder of this paper will outline my theoretical framework, arguing that decoupling—as it is framed within neo-institutional theory—can be investigated in a more meticulous way by using actor-network theory. Next, research design is presented, followed by background on reforms and discourses on the restructuring of local and national public health care in Norway. The subsequent two sections comprise the empirical core of the paper, a historical reconstruction (1987-2003) of the MIS development in the municipal-

ity of Trondheim. The final two sections consist of discussion, interpretation of the implications of the process, and concluding remarks.

2 Theoretical Framework

Neo-institutional theory has its focus on how values, norms and modes of rationality influence the way organized action unfolds (Scott 1992). One of its distinctive features is that it calls attention to cultural and normative frameworks in an organization's environments and its formal governance structures. Organizational structures are argued to have importance apart from, and regardless of, their impact on participant behaviour. The structures are viewed as signalling internal purposefulness and rationality, but also—especially to external audiences—demonstrating the organization's connection to and congruence with wider belief and rule systems (Scott 1995).

Within a neo-institutional perspective, formal organizational means such as MIS are considered rationalized myths. Rationalized myths are impersonal (collectively defined), taken-for-granted notions about what is 'rational' relative to given (institutionalised) ends. They tend to persist over time because they are so deeply rooted in institutional environments, professions, programs and technology (Meyer and Rowan 1991 p. 41). In organizational fields that undergo changes and reform efforts, there will be conflicting and competing rationalities, and complex and conflicting environments.

Heterogeneous functions, tasks, professions, client groups, and organizational cultures are key features of public health care services at the local governmental level in Norway. The heterogeneity is reflected in different organizational principles that are in simultaneous action. This combination makes it possible to strike a fragile balance between differing interests and values, but at the same time it creates dilemmas and contradictions between democratic, administrative and professional rationalities. Institutional values, such as the right to participate in critical decision-making (a democratic logic), must compete with the necessity to manage and control the organization (an administrative logic), and the professionals' claim for autonomy within their domain (a professional logic). The key to holding this together is the client. On a general level, they represent a shared legitimising base for all actors in the field, but this does not mean that there is agreement about how to deliver care to the client. When the actors express their opinions more concretely, they reflect the values and interests that prevail in their own domain. Accordingly, human judgment is an important element. This judgment gives rise to difficult

discussions and negotiations about how to prioritise and what criteria to use. It is a complex mixture of professional, administrative and political judgments.

According to Barley and Tolbert (1997), neo-institutional theory—although concerned with the dynamic relation between action and structure—has, to a large extent, ignored the processes, by which structures emerge from, or influence, action. I agree with these considerations and argue that by focusing on how structures emerge within an organizational practice, we gain insight about how decoupling may or may not occur as a contingent process. In that respect, we intend to combine actor-network theory with neo-institutional theory.

2.1 Decoupling

According to Brunsson and Olsen (1993), the hypothesis of decoupling operates as follows: When environmental norms and perceptions do not coincide with what is required for effective action and rational production, we can expect organizations to develop two sets of structures, processes and ideologies—one for each set of demands. Moreover, for the organization it is important that these parallel sets do not disturb one another, and they therefore tend to be decoupled, separated and isolated (Brunsson and Olsen 1993). Brunsson and Olsen write:

> In practice, the result is two organizational structures. The formal organization is the more visible one and which is relatively easily adapted to the institutionalised norm of society. At the same time, the organization can use a completely different structure for coordinating its activities. Similarly, two sets of organizational processes also evolve, one concerned with the production of goods and services and one which is displayed to the rest of the world but has little or no effect on production.

And they continue:

> Similarly, it is possible to affect people's picture of an organization by talk, changing a name or projecting an image through symbols without necessarily changing any structures or processes. Public reform then has an impact on the level of meaning that is signalling that the organization is open to change and renewal. Such an approach helps to explain why so many reforms are attempted, even though they have little effect on structures and processes, let alone on results (Brunsson and Olsen 1993).

As stated above, we argue that the way decoupling is conceptualised is based on a dichotomy between the symbolic and the substantial. We are critical of

this and we turn to Actor-network theory to be able to analyse processes of coupling/decoupling.

2.2 Actor Network Theory

According to Actor Network Theory (ANT), humans and non-humans are linked together into actor-networks (Hanseth and Monteiro 1995). Further, ANT assumes that (a section of) society is inhabited by actors pursuing interests. An actor's interest can be translated into technical or social arrangements such as an IS or organizational routines. A basic question ANT answers is how a diverse group of actors reaches agreement at all; that is, how a social order establishes a certain degree of stability or exhibits structural properties. According to ANT, stability is the end result of the social process of aligning an initially diverse collection of interests to 'one;' acceptance, 'truth' or stability is the result of reaching a certain degree of alignment of interests (Callon 1991). Thus, within ANT, decoupling can be considered a special case of coupling; that is, a reform project may not succeed when there is a lack of alignment of interest, and the project may turn into a highly symbolic one.

The strength of ANT is in providing a language for describing how a translation takes place on a quite specific and concrete level (Monteiro 2000). In that respect, the notion of inscription is important (Akrich 1992; Akrich and Latour 1992). An inscription is the result of the translation of one's interest into material form (Callon 1991), and it creates a link or a coupling between the material and symbolic. In general, any component of the heterogeneous network—skills, practices, artefacts, institutional arrangements, texts, and contracts establishing a social order—may be the material for inscriptions.

ANT systematically blurs the distinction between the technical and the non-technical. This also implies that symbols, language and organizational recipes act as elements in the process of construction. It also implies that technology receives the same status as human actors, so that the distinction between human and non-human actors is systematically removed. The solution reached is constituted by an aligned actor-network. To achieve this, since actors' interests from the outset are non-aligned, it is vital that one is successful in translating; that is, representing or appropriating the interests of others to one's own (Latour 1987). From this, it follows that ANT focuses on how elements are coupled through the alignment of interests; if there is decoupling, it is an effect of the way the actor-network is constructed.

In summary, using actor network theory coupling or decoupling is viewed as an effect of the way the actor-network is constructed. Alignment of interests represents a kind of coupling, while the failure to reach alignment might be

considered decoupling. More importantly, to analyse how coupling (or decoupling) eventually occurs, we must describe how the actor-network is constructed. This also opens up the road to analyse coupling/decoupling in regard to how it effects power relations.

3 Research Methodology and Collection of Data

Various sources of data were used as research material including participant observation, interviews, informal conversations, and documents of various kinds. Moreover, because we have analysed a historical case (a longitudinal study), the data collection was done in different time periods. The participative observations took place from 1989 to 1994 when the author worked as an organizational consultant and planner inside the Norwegian health care organization. This time period must be clarified: During this time, my role was not as researcher but as practitioner; however, being a consultant gave me rich opportunities for observation, reflections, and analysis. Additionally, being an academic in the fields of political science and organizational studies, my observation was made much broader in scope than the demand and content of the job in and of itself. Thus, the interpretations from this time period are based on theoretical lenses broader in scope then the role as a consultant. In addition, I had conversations with other actors who participated during that period with the explicit purpose of testing my own interpretations. It must also be stated clearly that the interpretations done in this paper is the responsibility of the author.

3.1 Research Phases

The first phase I labelled the ‘explorative phase.’ The MIS, a computer-based statistical client software program called The Main Card, was developed and put to use within a broader context of organizational and management reform. The second phase I named the ‘tight spot phase.’ There was a substantial change in the MIS after there was a financial crisis in the municipalities and a realization that the MIS did not work as intended. The new system, NIT PRO, was much broader in scope and included the production of client data, coordination of work in the service production units, and professional planning for the nurses. Thirdly, the ‘consolidation phase’ was a period in which the system began to be used on a relatively large scale, and huge investments in technical

training were made. In the last phase, which I characterized as 'radical change,' the system became integrated with an economic management system,

Sources of Data	*Explorative Phase 1987-1992*	*Tight Spot Phase (Phase of Elaboration) 1992-1997*	*Consolidation Phase 1997-2000*	*Radical Change 2000-2003*
Participant observation	Working as an organizational consultant	Working as an organizational consultant until 1994. One day stay at a service production unit - pilot project		
Interviews	Nursing care manager; Middle managers (3); Informal conversations	Project leader NIT PRO; IT instructor; IT consultant; Informal conversations	IT consultants (2); Unit care managers (3); Informal conversations	IT Project manager Economic consultants (3); Nurses (3); Unit care manager; Informal conversations
Documents	Planning report; Organization projects; National reforms	Cost-benefit report; Evaluation of the pilot project National reforms	Training manuals Organizational projects; National reforms	Information about the new economic management system on the web

Table 1: Sources of data in different phases of the research

creating conditions for a new model of resource allocation. In the table below, I present a schematic overview of how different sources of data were gathered during the different phases.

There are no systematic field notes from that period I worked as an organizational consultant but in addition to participative observation, I used documents and reports. To remedy the lack of systematic field notes, I have had several conversations with my former colleagues. I have interviewed the manager of nursing care to get his version of the story, and I also carried out a group interview with three middle managers. In addition, there have been several informal conversations. These interviews and informal conversations had two objectives: to get the interviewees' versions of events and to test out my own interpretations. I have also used documents and reports in the analysis of

national reforms. A very important dimension of participatory observation has been the opportunity to get in-depth knowledge about the health care field. As an organizational consultant, the author participated in several organizational projects with a broad range of participants from the administrative, professional and political domains. This gave rich opportunities to gain in-depth knowledge of issues and controversies that run through the health care field. Thus, it is reasonable to say that participatory observation has represented the most important prerequisite for this research.

To a certain extent, the second phase—tight spot—is also based on participatory observation. Due to severe financial problems, a comprehensive and top-down reorganization was carried out in the municipality. As an organization consultant, I participated extensively in the new organizational structure of The Health Care Department. I observed how this reorganization changed the opportunities for top-down management control and, in hindsight, how it influenced the development of the new MIS named NIT PRO. NIT PRO retained its enabling role as a producer of statistics, but which was complemented by an enabling role in the coordination of the production of services and professional planning. In the new Health Care Department I was engaged as a planner. My team and I tried very hard to use the scarce statistical data that, up to that point, had been produced through the Main Card. In doing so, we created a rich opportunity to experience the interrelationship between the production of statistics and other organizational issues.

In analysing the third phase, Consolidation, I used interviews, documents, manuals, quantitative data about actual use, and training programs. I had several meetings with IT consultants who were employed to maintain the system. Their responsibilities included technical training of the employees in the service production units. We received information about the technical dimensions of the system, the amount of resources spent on technical training, and the degree to which the system was actually used in the service production units. To counterbalance the data I had from these IT consultants, I interviewed three nurse managers in three different service production units. They gave information about the use of the system as a coordinative device, how they managed day-to-day use of the system, and the fact that the professional planning module was not used at all.

In the last phase, which I labelled ‘radical change,’ the data is again based on a combination of interviews, informal discussions, and documents. In this phase, a computer-based economic management system was constructed in the municipality. This took place in cooperation with a consultancy firm. A prerequisite for the operation of this system was the already-existing MIS (NIT PRO). To gain a more thorough understanding of this new system and

how it was related to the context, I interviewed the IT project leader, one nursing care leader, a group interview with three economic consultants, and three nurses in the service production units. I also had several informal conversations with the economic manager who had launched the idea of using the data in NIT PRO in the new economic management system.

Our main foci have been on two principles of interpretive research elaborated by Klein and Myers (1999); namely, the contextual principle, and the principle of abstraction and generalization. From multiple sources of data, I worked out a historical reconstruction of the whole process around the introduction, development, diffusion, and use of the MIS. The guiding categories have been the following: organizational change and public reforms, prevailing management strategies, and technological solutions directly connected to the functionality of the MIS. By using the time dimension as the "anchor," it was possible to see how the MIS development was connected to a number of other reform efforts. For instance, organizational changes varied considerably during the development process, including management by objectives, the purchaser-deliver model, and more sector-oriented reforms. Within these contexts, different actors have been engaged that were influencing or being influenced by the MIS development.

4 The Field Study

The location of this study was the city of Trondheim with 150,000 inhabitants. The local government as a whole has about 10,000 employees, of which 3,200 are employed within the health care sector. Both nursing homes and service production units are geographically dispersed throughout the city. The main client groups are the elderly, the developmentally disabled, and people with mental illnesses. During the period from 1987 to 2003, health policies were relentlessly reformed. The reforms ranged from sector-specific improvement within the municipality and administrative reforms on the local governmental level to national sector-specific reforms. The main strategic issue driving these changes in the health care field was the increase in the percentage of the elderly within the population. Coping with this increased demand required developing new ways of service production in an effort to balance scarce resources with maintenance of good service quality. In that respect, the allocation of resources between home-based services and services provided in nursing home settings became an important controversy. The trend has been to prioritise home-based services at the expense of institutions, a position legitimised by the rationale that such a strategy contributed to better service quality for

each client and was the most effective use of organizational resources. But the challenge, seen from the point of view of management, was how to find the right balance between home-based and nursing home services. This strategic issue was a mix of politics, organizational, and technological issues. The MIS should be instrumental in providing the administration with a knowledge base that documents the positive effects of any such strategy. The MIS, using empirical facts can help make political decisions concerning the allocation of resources and the development of the service structure.

The main actors in homecare service production units included administrative nurses, surgical nurses, home-help workers, nursing assistants, health managers, doctors, physiotherapists, ergonomics professionals, and psychiatric nurses. At the administrative level, I initially found the following actors:

1. Health Care Managers (one of these actors was the driving innovative force and the entrepreneur behind the MIS in its first and second phase).
2. Project leader (a nurse manager who was assigned to the project for developing the MIS).
3. Administrative staff (economic, organizational, personnel).
4. IT consultants.

As the system developed in scope and use, more and more actors became engaged in the system, and it became impractical to keep a complete list of actors.

5 The MIS as an Ongoing Failure

The MIS was introduced during a period of comprehensive effort to modernize care services in the municipality. One actor, the Manager of Nursing Care, was the main change agent. Being a former researcher within geriatrics, he entered the scene having relatively clear and ambitious notions about ‘how to do it.’ He initiated several change efforts, partly rooted in sector-specific ideas and partly rooted in theories of New Public Management or NPM. These changes ranged from new organizational structures focusing on a goal-oriented delivery of services to the introduction of Management by Objectives (MBO) and the implementation of nationally initiated health care reforms and new legislations. The main characteristics of MBO are the construction of a management practice in which the formulation of objectives and the evaluation of results are carried out systematically. In a certain sense, the Manager of Nursing Care was a politician and entrepreneur, trying to influence both the

actors at the grassroots level and the elected politicians. But this mixture also made him a stranger with regard to institutional values at work in the service production units. He might be characterized as a translator of general ideas, embedded in the ongoing reform efforts and trying to make them materialize in practice. To accomplish this goal, he was dependent on the other actors in the field because they represented obligatory passage points through which the change initiatives needed to pass (Latour 1987). The Manager of Nursing Care was successful in restructuring the care services in such a way that he became the central point in the evolving actor-network. However, there were problems. The nurses felt that their dominant position as care service leaders was threatened. Other professionals, such as the physiotherapists, expressed "fear" of losing their professional autonomy. To strengthen his role, the Manager of Nursing Care initiated rather intensive interactions between himself, his staff, and the nurse managers in the service production units.

The enabling role of the MIS was to produce statistical knowledge that could be used in the effort to modernize health care services for the clients. Further, the MIS—labelled the Main Card—was constructed and tested at an applied research institute. The Main Card in its first phase turned out to be a failure, but a failure that did not die. We characterized it as 'an ongoing failure.' Such an interpretation is based on the author's own experience as an internal organizational consultant in that phase. Moreover, our interpretation is that it was constructed too one-sidedly to satisfy the interests of top administration and their need for statistical knowledge. This was true despite efforts to include actors from the service production units in the development process. Neither the unit leaders nor employees showed much interest in classifying the clients or putting the information into the computer. However, as an ongoing failure, relative to the expectation at the outset, Main Card had entered the field symbolically, achieving a sort of legitimacy. Thus, instead of being an instrument to be used in the effort to modernize the health care organization, it became a contested and resource-demanding object of development. This is the reason for characterizing the Main Card as an ongoing failure, which I will discuss in the next section.

5.1 Management by Objectives and the Main Card

Project MBO was highly symbolic in character. It was a discussion about the substantial values in health care services and was carried out with active participation by employees and managers in the service production units. It resulted in a written goal-structure both for clients and for employees. These goal-structures were used in operative planning in the service production

units. On the other hand, MBO set out to produce hard facts about an objective situation. The Main Card was a tool constructed to assist in the production of such facts. The logic of MBO was mobilized, and an IT technician was hired to construct the system. The necessary investments in IT equipment were made and distributed to different service production units in different areas in the city.

There was decoupling in the sense that the development of the MIS and the MBO project went in different directions. The MIS turned into a failure while the MBO turned into a highly ritualistic process of organizational development. What actually happened was that the operative planning, which was supposed to be linked to the effective use of economic and human resources, became translated into highly qualitative improvement planning. This was clearly demonstrated in the evaluation of the plans. Thus, the effort to introduce operative planning in the service production units did not materialize and became "decoupled." The hard fact of economics escaped the change effort! The MBO project turned out to be a highly symbolic change effort combined with the construction of a MIS that turned out to be a failure. How can we explain this?

One way to explain this ongoing failure is that the potential constructive idea of the Main Card coincided with the simultaneous visions of the reforms efforts. In our approach, reforms and the enabling role of IT are not only rational means to achieve stated ends. These ideas act as norms about what the world *ought* to look like and, thus, create a demand for solutions. Accordingly, although the MIS turned out to be a failure, it represented, so to speak, a strong symbolic and material force despite its failure to produce reliable statistical knowledge. This ongoing failure was a kind of decoupling, but above and beyond that, this was an effect of the dynamics between the process' symbolic and technical elements. MBO was a theory that was not rooted in the realities of health care. On the other hand, the idea of the Main Card travelled to a national level, turning into a project named GERIX, which was to develop a statistical program used nationwide.

6 Inscription of Interests

The direction of MIS development changed when a nurse manager, acting as a spokesperson, got support for the idea that the Main Card as MIS could be useful for actors in the service production units, that the new system could be constructed to retain its enabling role as a producer of statistics but could also complement the coordination of the production of services and professional

planning. Thus, in a very concrete sense, we observed inscription of interests into the MIS.

After a complex process of technical construction, the new system was tested out in a pilot project. The introduction strategy was to be carried out throughout the organization. However, the pilot project was too biased toward the technical dimensions of the system. Organizational problems arose, and conflicts between the project leader and the participants led to a breakdown of this implementation strategy. The subsequent effects were twofold: the technical closure of the system, and a breakdown of the strategy of participation.

Two events in the pilot project were of particular importance in respect to my discussion. The project contributed to a refinement of the system. I interpret that as a technical closure. In that respect, the project achieved its goal. On the other hand, the strategy of participation was not successful. The project manager quit her job stating that such a project has to be managed through the ordinary chain of command. This resulted in a redefinition of the strategy of implementation. As we shall see later, a top-down strategy was chosen.

In my view, the relation between the technical closure of the system and the breakdown of the pilot project is a kind of decoupling; a decoupling in the sense that it was an effect of the events in the process. It reflected the problem of integrating different logics, values and interests at work in the field. NIT PRO as a technological artefact, so to speak, needed a field to test itself. Such a practice did not exist. The service production unit in which the system was tried had to elaborate newly formalized routines that fit the requirements of the system. This created conflict, because the participants in the pilot project expected to influence the system to match their current practices. Thus, we had a problem both technological and organizational but in practice was treated as two independent elements. My interpretation is that this was a decoupling process occurring between the technical artefact as a representative of the administration and the organizational practice (in particular the nursing profession) in the service production units. The actors' capacity to cope with the problem of cooperation had reached its limit.

In the wake of the collapse of the pilot project and the technical closure of the MIS, a top-down strategy was chosen. This change in strategy led to conflicts, which paradoxically strengthened the legitimacy of the system. The top administration used the dispute as an opportunity to get political support for the system. They accomplished this by going back to the need for statistical knowledge to be used in the decision-making processes. Politicians strongly supported this, and the problematic situation was resolved. Moreover, it became legitimate to invest in a comprehensive educational program so the employees could learn to use the system.

During the period of 1997 to 2000, the MIS, to a certain degree, turned into an obligatory passage point in the delivery of client services. About 200 workstations were connected to the server simultaneously. By producing statistics, it became an element in a wider actor-network. It "settled down" in centres of calculation (Latour 1999) both on the local governmental level and on the national level through GERIX. However, there was only partial use of the system. The statistical data produced were used in a highly improvised manner and on an ad hoc basis. In spite of this, it is reasonable to say that the system was implemented on a large scale. Although still contested, it has become a necessity in the day-to-day activity of the service production units.

The development of NIT PRO illustrates how different logics, values, and interests are inscribed into the MIS. The actors at the grassroots level, when using the system for their own sake, now do the job of classification that is required for the production of statistics. The Main Card became GERIX, and its focus on the classification of users and the production of statistical knowledge is now less prominent. It is integrated into the system of day-to-day coordination of service production and has a more invisible role. Actors at the grassroots level produce statistical data that are to be used primarily elsewhere. At the same time, they have an administrative system for their own use, and these two functions are mutually dependent on each other. Thus, instead of observing decoupling, we observe a process in which heterogeneous elements are brought together. If there is decoupling (that is, the fact that the nurses did not show any interest in using the professional planning module), it is an effect of a process in which the symbolic and the substantial are intimately linked. MBO as the guiding theory did not suit the interests of the nurses. I assert that decoupling is embedded in deep-seated assumptions about what the world is like: that organized action is classified within a substantial framework in which there is a dichotomy between the symbolic and the material. The theory that the symbolic and the material are actually linked within such a framework is difficult to comprehend. My contention is that they surface as problems to be handled but, occurring within the same dichotomised logic, with the consequence that the problems persist or are even strengthened.

The alignment of interests is only partial. The administrative elements of the MIS have been put to use, but the way they are used is far removed from the original intentions. Getting reliable data turned out to be a pervasive problem. The professional element was not used at all because the professional practice was too far from the model of MBO inscribed into the software program. Moreover, the fact that the surgery nurses did not use the system clearly demonstrates their freedom of action. It also demonstrates that they have an autonomous legitimating base that has difficulty negotiating concretely with

administrative logic. Furthermore, I observe that the system, in addition to its enabling role, is starting to demand resources. During the process, IT staff became established as responsible for the maintenance and improvement of the system. In addition to the resources spent on education, a relatively large amount of labour time is also used by the employee running the system in each service production units.

7 Radical Organizational Change

In 1997, the municipality decided to implement a new organizational model labelled 'the ordering-delivery model.' It consisted of two main dimensions: Firstly, four service offices were established, geographically spread throughout the city. They were given the responsibility for the diagnosis, design and decisions of services for clients as they applied (the ordering function). Previously, the client went directly to the service production unit. On their part, the service production units were made responsible for delivering services ordered from the service offices. The second dimension consisted of this new model's represented a radical break with the existing formal management structure. The number of administrative levels was reduced from five to two. One level now consists of the service production units, each of which is headed by unit managers. There are about 80 of these units. The other administrative level is nothing but the top executive level. The underlying principle is that anyone who doesn't formally belong to one of the service production units is considered to be formally acting on behalf of the city manager at an executive level. However, there is an ambiguity in this construction that arises because of the principle of only two levels.

Within this model, the actors in the above-mentioned service offices are formally defined as 'independent units' with a formal status similar to the service production unit, but they also act on behalf of the city manager. The service offices and the service production units are on equal footing, while at the same time they *both* have to act on behalf of top management within their own areas of responsibility. Such a model opens up the possibility of power relation based on negotiation. Another consequence of this model is the proliferation of staff members or what might be labelled 'quasi-staff.' The Health Care Manager acting on behalf of the city manager is surrounded by a considerable number of economics, human resource management, planning, and IT consultants. Thus, we observe the rise of a new structure in which the classical bureaucratic model, to a certain extent, has formally disappeared.

This new model was launched—that is, formally implemented—with many unsolved problems and challenges. My interpretation is that, as a radical new model, it became an element active in opening up the road for the further MIS development. The order-delivery model moved away from a relatively well-ordered and detailed administrative structure and, thus, introduced uncertainty and ambiguity. The new structure simultaneously created zones of uncertainty and new opportunities for using legitimate power (Crozier and Friedberg 1980).

The project leader concerned with IT maintenance and development confirms that the establishment of the service offices turned into a demand for information for which NIT PRO became a potential solution. Specifically, the service office actors perceived the necessity for a communications device between the service production units. Highly relevant in their perception was the ability of NIT PRO to produce documentation of the clients' needs and their level of functionality in the diagnosis, design and delivery of services.

A new Health Care Manager came on the scene during this period. The IT consultant felt that this new manager did not see the potential of NIT PRO. "It was not easy to get support in this period," he said. This changed when an economic crisis arose. The politicians demanded that action be taken to achieve economic control. This situation became an opportunity to launch the idea of using NIT PRO to produce client data. Such an idea received approval, and a joint project between the municipality and an IT firm came into being. A software program was designed that could use knowledge produced by NIT PRO to estimate the relative share of economic resources that should be allocated to each service production unit. It is a prize-setting system based on the level of functionality of each client grouped within 10 different samples.

As stated above, although NIT PRO was used on a relatively large scale, the quality of the documentation of a client's level of functionality varied. The problem, seen from the position of the top administrative management, was how to motivate or force the managers and employees in the service production units to do a thorough documentation and thereby achieve high-quality data about the client's functionality level. The Health Care Manager sent out a manifest ordering the service production unit managers to prioritise the documentation of clients. The message was complemented with sanctions stating that if documentation was not done properly, they risked losing resources. Thus, an economic dependency relation was created. The new budget model—the group prize-setting system—is dependent on thorough client documentation; at the same time, the service productions units' economic resources are dependent on the computer-based budget system. We are observing the development of a quasi-market. The MIS appears to have become

allied strongly with NPM with a new power relation constructed between the administration and the service production units.

8 Discussion

Within neo-institutional theory, Meyer and Scott (1983) have introduced the distinction between technical and institutional environments. Technical environments refer to how organizations make products or services that are exchanged in markets and are then rewarded for effective and efficient performance. These environments foster the development of rationalized structures that efficiently coordinate technical work. In the purest sense, such environments are identical to competitive markets. By contrast, institutional environments are characterized by the elaboration of rules and requirements to which individual organizations must conform in order to receive legitimacy and support. In institutional environments, organizations are rewarded for using appropriate structures and processes, not for the quantity and quality of their outputs. The fact that the health care sector is characterized by contradictory logics, values, and interests makes the institutional environment highly ambiguous. However, the legitimising base for the MIS has been the implicit desire to construct a system that enables management to compute the cost structure of service production and calculate demand in line with NPM. This is a process in which these two environmental characteristics are blurred. Given that we observe both coupling and decoupling, we must explain how this comes about. Thus, we move beyond the dichotomy between these two types of environments.

8.1 Decoupling in Practice

NPM is a modern reform trend containing strong "rational" visions of the smooth-running organization combined with implicit assumptions about an objective reality. Such an approach corresponds with the objectives of the MIS development discussed in this paper. Statistical facts about the service production should be discovered and put to use in a rational decision process. On the other hand, because of this strong focus on the organization as an instrument to achieve efficiency and effectiveness in a technical sense, the symbolic dimensions tend to be taken for granted. We argue that there is a kind of decoupling between the "symbolic" and the "technical" operating in practice. It is an institutionalised notion that such distinction exists and has real effects. My interpretation is that a certain dichotomy between the symbolic and the

material has been a pervasive and, to a great extent, tacit assumption in the MIS development. The Project: Management by Objectives illustrates such a dichotomy. On the one hand, it was a highly symbolic mobilization of employees, focusing on the importance of identifying oneself with the raison d'être of the organization. From the point of view of the top management, the process of creating the goal-structure was considered important because the employee could be more conscious about what should be considered valuable in the service production.

On the other hand, the MIS was based on an empirical and technical approach used in the name of technical efficiency. The Main Card was constructed as a tool capable of realizing such an objective and had its legitimated base in a quantitative social science method. The MBO project as organizational development was rooted in a phenomenological approach in which meaningful actors participated in the project. We have, then, two entirely different change projects gathered into one program of action. Firstly, there's the value-discussion, which is symbolic in nature; secondly, the computer-based statistical program, which is highly material and technical. The MBO was the theoretically formulated link between them. This theory turned out to be a failure because it was not sufficiently rooted in the realities of the health care sector.

As stated in the introduction to this paper, within e-government, IT is, to a great extent, considered a tool for reforming public bureaucracy; e-government failure is often explained as a consequence of bureaucratic rigidity. In that respect, e-government has similarities with NPM, which is negatively legitimated through a critique of bureaucracy. On the other hand, it is positively legitimated as solutions contributing to a more rational and effective public sector. Although it is a highly materialistic approach, it must also be considered a strong symbolic or discursive force. When New Public Management translates ideas into reform projects, the symbolic or discursive dimensions are strongly at work in the arguments, and NPM puts into practice the legitimating rhetoric embedded in the effort to make the reform materialize. Observing discrepancies between intended and actual effects does not imply that change efforts do not have effects. I state that it is precisely when we focus on the way that the actors try to handle such a discrepancy is when we gain a more in-depth understanding of the MIS development. This implies that although we observe decoupling in the sense that reforms do not have the intended effects, we cannot conclude that they do not have *any* effect at all. This case demonstrates that the ongoing failure then translated into a substantial change of the MIS as different values and interests were inscribed into it. But again we observe that the alignment of interests was only partial: The

nurses were reluctant, and the classification of clients was imperfect. Thus, the symbolic dimensions of the reforms were decoupled from the practical work of the service providers. But the MIS has slowly and, through a long-lasting process of development, turned into an active element in the service production units and has represented primarily the interests of the administrative management.

8.2 The Construction of Quasi-Markets

This case illustrates how a kind of quasi-market is constructed and how the environment of the production of health care services becomes more focused on technical efficiency. My interpretation is that the MIS turned into an enabler when it allied itself with economics. I state that symbolic power is a necessary condition for this achievement. When NIT PRO became coupled with the new economic management system, the administrative management could order the actors in the service production units to do a thorough classification. Management threatened the actors with economic sanctions if they did not comply, turning the MIS into a powerful tool in the hand of administrative management.

This implies that new power games are emerging. Economic logic (relying implicitly on legal rational authority) becomes more dominant while the care logic (the sectorial values and interests) has to play the game of the administration to a greater extent. The MIS plays a role both as a boundary-spanning object (Bowker and Star 1999) integrating contradictory values and interests at the same time as it is an active element in new power games. How the classification of clients is done becomes crucial because it is directly linked to the amount of economic resources received. I assert that this creates the conditions for more strategic action in the service production units and a more direct form of economic management on behalf of the administration. The new power game in which the MIS is a prerequisite tightens economic relation between the service production units and the administration. It appears to create a decoupling between the care logic and the administrative logic. If this is a reasonable analysis, we should expect crises to arise in which spokesmen of the care logic will express dissatisfaction and/or try to use the system for their interest.

9 Concluding Remarks

Using neo-institutional theory makes us sensitive to the power of institutions in the MIS development. This is highly relevant for e-government research. In this paper, I have proposed to use decoupling not as a theoretical assumption that draws a dichotomy between the symbolic and the material, but as a contingent phenomenon. I have tried to illustrate both decoupling and coupling. The case demonstrates that the relation between IT and organizational reforms produces effects that may be both strongly coupled and decoupled. My tentative conclusion is that decoupling is intimately related to the theories guiding the reform efforts. Based on a rational perspective in which the symbolic and the material are dichotomised implicitly as two independent domains, there is no way to reflect on how they are interrelated. A rational perspective is not aware of its own symbolic force. It is concerned with how to manage a material world efficiently and effectively. It is a theory that hides from itself while at the same time represents a vision of how the world should be and a strong action theory about how to the world should be organized. People and technology are considered instruments in the hand of the "organization." The fact that an organizational practice produces outcomes that do not correspond to the implicit expectation of the rational model is not explained as shortcomings in the theoretical model. Paradoxically, when unforeseen consequences, unexpected problems, and surprises arise, they tend to be coped with within the same theoretical framework. We may even go a step further and say that they are a necessary flow of events in the reproduction of the existing structure of domination.

We observe the emergence of new symbolic power relations (Bourdieu 1990) in which the MIS plays an important role. At the same time, as economic logics become more dominant, we observe a certain kind of decoupling of the sectorial interests. The relation between the MIS and the symbolic power within the framework of legal-rational authority creates new and strong power relations in which administration takes the upper hand. This should be investigated further. One interesting question regards how symbolic power is linked to the dynamics of legitimacy; that is, how it is taken for granted. A consequence is that it is hard to discuss. Paradoxically, it works just because it is taken for granted.

The case study demonstrates that IT development is related to a heterogeneous set of issues: Economics, bureaucracy, democracy, professional autonomy and politics are involved in the process of development and use. The MIS I have studied has turned into an active resource-demanding actor in these processes and, as such, it does not only have an enabling role. E-governance

analysis should move beyond the dominant notion that IT has an enabling role. We do not disagree that IT ought to be useful, having an enabling role in the creating of the good society. IT does have this role but, as I have shown, there are values and interests at stake, and different logics are competing both during development and use. There should be much more debate and analysis of how these processes occur and more open debates about effects and controversial issues. We have to take seriously the fact that interests are inscribed into the technological artefact, and this should be made explicit in the analysis. But we also have to cope with the paradox that technology symbolically is recognized as legitimate knowledge or competence and that it is not a neutral and apolitical tool performing an enabling role. We have to take seriously that the recognition of IT as a tool is a very dominant notion in practice and that in practice it is not easily considered as a resource invested in and used by the actors within their ongoing power game. This is a fact that should be an element in our analysis. If it is not, we turn into researchers in the hand of those who need IT to enhance their interests.

Reference

Akrich, M., "The De-scription of Technical Objects," in *Shaping Thechnology/ Building Society,* W.E. Bijker, and J. Law (eds), MIT Press, MA, 1992, pp. 205 -224.

Akrich, M., and Latour, B., "A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies," in *Shaping Technology/ Building Society,* W.E Bijker, and J. Law (eds), MIT Press, MA, 1992, pp. 259-264.

Andersen, K. V., "E-government and Public Sector," in *Process Rebuilding (PPR), Dilettantes, Wheelbarrows and Diamonds,* Kluwer Academics Publishers, The Netherlands, 2004.

Barley S. R., and Tolbert P. S., "Institutionalisation and Structuration: Studying the Links between Institutions and Actions," *Organization Studies* (18), 1997, pp. 93-117.

Bellamy, C., and Taylor, J. A., *Governing in the Information Age,* Open University Press, Buckingham, 1998.

Bowker, G. C., and Star, S. L., *Sorting Things Out,* The MIT Press, Massachusetts, 1999.

Bourdieu, P., *In Other Words - Essays Towards a Reflexive Sociology,* Polity Press, Cambridge, 1990.

Brunsson, N. and Olsen, J. P., *The Reforming Organization*, Fagbokforlaget, Bergen, 1993.

Busch, T., Johnsen, E., and Vanebo, J. O., *Endringsledelse i det offentlige*, TANO, 1999.

Callon, M. "Techno-Economic Networks and Irreversibility," in *A Sociology of Monsters, Essays on Power, Technology and Domination*, J. Law (ed.), Rutledge, London, 1991, pp. 131-161.

Christensen, T., and Lægreid, P. O., "A Transformative Perspective on Administrative Reforms," in *New Public Management. The Transformation of Ideas and Practice*, T. Christensen and P. O. Lægreid (eds.), Ashgate Publishing Limited, Hampshire, 2003.

Czarniawska, B., and Sevon, G., *Translating Organizational Change*, De Gruyter, New York, 1996.

Crozier, M., and Friedberg, E., *Actors and Systems. The Politics of Collective Action*, The University of Chicago Press, Chicago, 1980.

Ferlie, E., Ashburner, L., Fitzgerald, L. and Pettigrew, A., *The New Public Management in Action*, Oxford University Press, Oxford, 1996.

Hanseth, O., and Monteiro, E., "Social Shaping of Information Infrastructure," in *Information Technology and Changes in Organizational Work*, W. Orlikowski, G. Walsham, M. R. Jones, and J. I. De Gross (eds.), Chapman & Hall, 1995. pp 325 - 343.

Hood C., "A Public Management for all Seasons," *Public Administration*, (69:Spring), 1991, pp. 3-19.

Jain, A., "Using the Lens of Max Weber's Theory of Bureaucracy to Examine E-Government Research," in *Proceedings of the Thirty-Seventh Annual Hawaii International Conference on System Sciences*, D. C. Martin, L. Palagi, and R. Bilof (eds), IEEE Computer Society, 2004.

Kawalek, P., Wastell, D. G., and Newman, M., "Problematisation and Obfuscation in E-Government," in *Proceedings, EGOV 2003*, R. Traunmüller (ed.), Springer Verlag, Berlin, 2003.

Klein, H., and Myers, M., "A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems," *Management Information System Quarterly*, (23:1) 1999, pp. 67-69.

Latour, B., *Science in Action*, Open University Press, 1987.

Latour, B., *Pandora's Hope*, Harvard University Press, Cambridge, 1999.

Lægreid, P., Rolland, V. W., Roness, P. G., and Ågotnes, J. E., "The Structural Anatomy of the Norwegian State 1947-2003," *Working Paper 21*, Stein Rokkan Centre for Social Studies, Bergen, 2003.

Meyer, J. W., and Rowan, B., "Institutional Organizations: Formal Structure as Myth and Ceremony," in *The New Institutionalism in Organizational Analysis*, W. W. Powel and P. J. Di Magggio (eds.), University of Chicago Press, Chicago, 1991.

Meyer, J. W., and Scott, R. W., *Organizational Environments: Rituals and Rationality*, Sage Publications, Beverly Hills, CA, 1983.

Orlikowski, W. J., and Barley, S. R., "Technology and Institutions: What can Research on Information Technology and Research on Organizations Learn From Each Other?," *MIS Quarterly*, (25:2) 2001, pp.145-265.

Robbin, A., Courtright, C., and Davis, L., "ICT and Political Life," *Annual Review Of Information Science and Technology*, (38), Knowledge Industry, White Plains, NY, 2004, pp. 411-482.

Sahlin-Anderson, K., "National, International and Transnational Constructions of New Public Management," in *New Public Management. The Transformation of Ideas and Practice*, T. Christensen and P. O. Lægreid (eds.), Ashgate Publishing Limited, Hampshire, 2003.

Scott, W. R., *Organizations, Rational, Natural and Open systems*, Prentice Hall, Englewood Cliffs, N.J., 1992.

Scott, W. R., *Institutions and organizations*, Sage Publications, London, 1995.

Traunmüller, R., and Wimmer M. A., "E-Government at a Decisive Moment: Sketching a Roadmap to Excellence," *Proceedings, EGOV 2003*, R. Traunmüller (ed.), Springer Verlag, Berlin, 2003.